RAILWAY PLATFORM HELPER

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ABSTRACT

Railway Platforms can be large, confusing, and intimidating for new travellers and visitors. Finding the station may be easy using a GPS unit or Google Maps directions, but this changes when you are actually on the platform. There is no service that provides directional assistance within the platform itself. This paper presents the architecture and design specifications for a platform navigation application on an Android platform improving the experience at stations. This application allows us to view railway station platform layout.

KEYWORDS: Micro-environment, Context-awareness, Daemon process, GPS, Accelerometer, Gyroscope, Ubiquitous, human-centric, Ambient light sensing.

Introduction

One of the most popular smart phone technologies is Android. It is an open source platform, meaning that its code is released to the public as soon as the new version of the platform is completed. In addition, any user with the desire and knowledge to modify or create Android applications is not only able to, but encouraged to do so. This is a unique way Android developers are interacting with users and their input makes the Android platform stay on the budding edge of the market. Users are able to customize their devices as they see fit, and they can share any apps they create easily with other Android users, spreading new ideas and software.

Today's drivers are well equipped for travel thanks to the GPS units many have in their cars, which help them not only find their way, but also avoid congested routes and drive safely. These are not the drivers of yesteryear that have to stop for directions or get lost. GPS applications allow users to enter a destination and using their current coordinates, display the fastest way to get to their destination. Additional features have evolved over time, such as displaying congested routes, which allow users to make the smart driving decisions and improve driving safety as well. This saves time and stress when going to unfamiliar places or taking long trips. Since this technology is readily available to scientists and engineers, it is therefore important for us to make use of it and improve it as much as possible for the sake of the users.

We designed an application on Android OS and reduce the efforts of a traveler on railway platform.

2.Literature Survey

Providing a route to a destination that has been available for general directions for a while using GPS and Google Maps, as was mentioned previously. However, there has not been much made available for the specific task of directing users around a college campus, using a map with an over laid route. There are plenty of college websites that provide directions and maps, including interactive maps, but not ones that allow the user to select a destination. Performing some research we came across a few applications which were aimed at similar idea to our application.

Google has been involved with a few projects that have similarities to ours. The one that most resembles our project is the 2007 Google Street View Project. This project involves taking images using car, trike or bike mounted cameras and mapping unique areas such as parks, university campuses and malls.
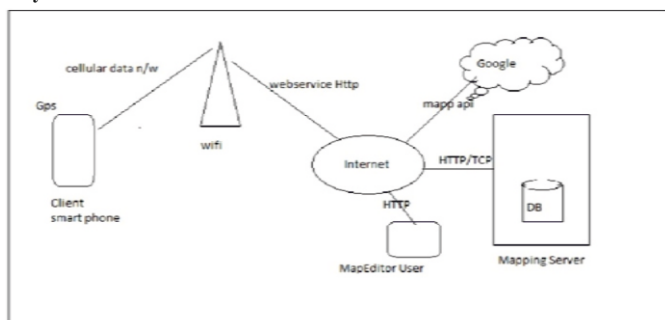
4. System Architecture

Figure 1: System Architecture

5.Implementation
Methodologies/Algorithm Details
System Features

This project explores the need, development of railway guide system for Indian railways. Many people travel daily in train and came across so many railway station and platforms. There has always been a problem to locate a book stall, canteen, bathroom, waiting room etc. on unknown station/platform. So we wanted to build an android app which will inform you which will be the next coming station and what is the layout of stations, like how many platforms, where is police station on map/own display. This will help user to get to know the next station before reaching the station and help to locate whatever we need on that station. We would also like to add one more feature like app would show how much time train will stay on this station and remind the user 30 sec before.

We have provided following features into our system:
- Admin side authentication and client registration.

- Password Secure database.

- Database connection polling technique used to efficiently used database connections.

- Client side android application to access platform view station details.

- REST over HTTP Standard communication technique is used for Client-Server communication.

- Data is encrypted using standard base64 algorithms.

- Modular software design approach so that system can be updated easily.

- SMS notification on every important event.

- MVC 3 tire software architecture used as coding style.

- HTML 5 based server side GUI.

- Proper error messages to user in case of system failure.

6. Modules
Web based GUI:

Server will be web based application and this module will be responsible to take inputs from admin. The GUI is developed in HTML and Java- script. Our server input will be taken through this GUI where proper validations are supported. This includes new student registration, new assignment upload, etc.

Database Manager:

This module will help to handle all database related activity. All the SQL queries will be taken care in this module. A database connection polling system will be present to avoid repeatedly opening and closing database connection. The JDBC driver manager ensures that the correct driver is used to access each data source. The driver manager is capable of supporting multiple concurrent drivers connected to multiple heterogeneous databases.

Communication Manager:

Communication Manager will handle the client server communication part. We have used REST over HTTP Standard communication technique for communi-

cation. REST stands for Representational State Transfer. (It is sometimes spelled "ReST".) It relies on a stateless, client-server, cacheable communications protocol - and in virtually all cases, the HTTP protocol is used. REST is an architecture style for designing networked applications. The idea is that, rather than using complex mechanisms such as CORBA, RPC or SOAP to connect between machines, simple HTTP is used to make calls between machines.

System Configuration:
The configuration manager which will be holding IP address of the entire client will be singleton in nature. The singleton pattern is a design pattern that restricts the instantiation of a class to one object. This is useful when exactly one object is needed to coordinate actions across the system.

Location Manager:
This module calculates the distance between two lat/long points. This will help in finding nearest station and alarms system. We have used Harvesine formula to calculate the distances in kilometre.

6. Conclusion
This report gives detailed idea about how the Railway Platform Helper application is going to work. Some situations where people can actually use this application are mentioned in this report.

The Railway Platform Helper on an Android Platform is an Android application written in Java programming language, and is intended for Android smart phones and devices. The app implements a user interface to establish the user type and desired destination, and then retrieves a layout so that it reduce the effort to find objects on station hence valuable time of the user.

The campus driving directions application can be enhanced with additional features like ringing of alarm when the train is about to reach the station.

In the end the developed application can be integrated with other railway based application.

7. Acknowledgement

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